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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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EXAMINER

DOAN, JENNIFER

ART UNIT PAPER NUMBER

2874

DATE MAILED: 05/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

09/991,371

Applicant(s)

DELIWALA ET AL.

Examin r

Jennifer Doan

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above claim(s) 8,29-31 and 34-36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 45-48 and 53-56 is/are rejected.
- 7) ☒ Claim(s) 5-7,9-28,32,33,37-44 and 49-52 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 02/19/03, 01/27/03, 01/14/03, 11/01/02
and 04/15/02
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Applicants' election without traverse of claims 1-7, 9-28, 32, 33 and 37-56 in paper filed on 04/23/2004 is acknowledged.

Claims 1-7, 9-28, 32, 33 and 37-56 are now pending.

This application is a continuation in part of the U.S. application serial number 09/859,693 filed on May 17, 2001.

Drawings

1. The drawings, filed on 11/10/2001, are accepted.

Information Disclosure Statement

2. The prior art documents submitted by applicant in the Information Disclosure Statements filed on 02/19/2003, 01/27/2003, 01/14/2003, 11/01/2002 and 04/15/2002, have all been considered and made of record (note the attached copy of form PTO-1449).

Specification

3. Applicants' cooperation is requested in correcting any errors of which applicants may become aware in the specification.

Claim Rejections - 35 USC § 102

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4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-4, 46, 47 and 53-56 are rejected under 35 U.S.C. 102(b) as being anticipated by Richter et al. (U.S. Patent 5,180,288).

Regarding claims 1, 53 and 56, Richter et al. disclose (in figure 4) a method and an apparatus of an anisotropically etched prism assembly comprising a device portion (40) including a plurality of optical devices (43) arranged in a first fixed pattern, each pair of the plurality of optical devices spaced a first prescribed distance apart; a light coupling portion (41) including a plurality of anisotropically etched prism, each on of the plurality of anisotropically etched prism arranged in second fixed pattern so as to correspond with a respective one of the plurality of optical devices, wherein each one of the pairs of the plurality of anisotropically etched prism are spaced a second prescribed distance apart, the second prescribed distance substantially equals the first prescribed distance (as shown in figure 4).

Richter et al. do not explicitly disclose an alignment portion used to align the light coupling portion and the device portion. However, Richter et al. disclose the device portion and the light coupling portion are interconnected side by side; therefore, it would inherently meet the limitation of the claim.

Regarding claims 2, 3, 54 and 55, wherein a securing portion (42, figure 4) is an adhesive used to secure each of the anisotropically etched prisms to a respective one of the optical devices (column 4, lines 27-35).

Regarding claim 4, further each of the anisotropically etched prisms to the respective one of the optical devices combine to form a hybrid active electronic device and optical circuit including an active electronic device and at least one of the plurality of optical devices (as shown in figure 4).

Regarding claim 46, wherein the device portion (40, figure 4) includes a silicon insulator (SOI) flip chip portion.

Regarding claim 47, wherein the light coupling portion (41, figure 4) includes an optical/electronic I/O flip chip portion.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

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were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 45 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richter et al. (as cited above).

Regarding claim 45, Richter et al. disclose all the limitations of the claimed invention except for the anisotropically etched prism being KOH. However, it is a well known material; thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the above material to make the anisotropically etched prism, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding claim 48, Richter et al. disclose all the limitations of the claimed invention except for an arrayed waveguide (AWG). However, the AWG is considered to be obvious, since it is commonly used in an optical communication system. Such an element would advantageously provide a better optical signal transmission. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Richter's device with an AWG for obtaining a better optical signal transmission.

Allowable Subject Matter

9. Claims 5-7, 9-28, 32, 33, 37-44, and 49-52 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art fails to disclose or reasonably suggest an anisotropically etched waveguide prism including an evanescent coupling region is formed from a gap portion that couples the input and output light coupler as recited in claims 5, 49 and 52.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ueda et al. (U.S. Patent 4,421,381), Lee et al. (U.S. Patent 6,316,281), Kraiczek et al. (U.S. Patent 6,525,884) and Ihara et al. (U.S. 2004/0004765) disclose an anisotropically etching.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Doan whose telephone number is (571) 272-2346. The examiner can normally be reached on Monday to Thursday from 6:00 am to 3:30 pm, second Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jennifer Doan

JD

May 14, 2004

Phan T. H. Palmer

**PHAN T. H. PALMER
PRIMARY EXAMINER**